

Bellwork: 4/26/13

Perform the indicated operation:

1) $(6-7\sqrt{5}) - (-3+5\sqrt{5})$

$$6 - (-3)$$

$$-7\sqrt{5} - 5\sqrt{5}$$

$$9 - 12\sqrt{5}$$

2) $(9 + 2\sqrt{48}) + (4 - 3\sqrt{75})$

$$16\sqrt{3}$$
$$44$$

$$-15\sqrt{3}$$
$$25\sqrt{3}$$
$$55$$

$$9 + 4 = 13$$

$$8\sqrt{3} - 15\sqrt{3} = -7\sqrt{3}$$

$$13 - 7\sqrt{3}$$

13) $3\sqrt{8} + 3\sqrt{2}$

14) $-3\sqrt{6} + 3\sqrt{6}$

15) $-3\sqrt{20} - \sqrt{5}$

16) $2\sqrt{45} - 2\sqrt{5}$

17) $3\sqrt{18} - 2\sqrt{2}$

18) $-3\sqrt{18} + 3\sqrt{8} - \sqrt{24}$

19) $3\sqrt{18} + 3\sqrt{12} + 2\sqrt{27}$

20) $-3\sqrt{5} - \sqrt{6} - \sqrt{5}$

$$21) -3\sqrt{2} + 3\sqrt{20} - 3\sqrt{8}$$

$$22) -3\sqrt{3} - \sqrt{8} - 3\sqrt{3}$$

$$23) -2\sqrt{20} + 2\sqrt{18} - 2\sqrt{5}$$

$$24) 6\sqrt{2} - 4\sqrt{3} + 6\sqrt{2} = 12\sqrt{2} - 4\sqrt{3}$$

$\begin{matrix} \uparrow & \uparrow & \uparrow \\ 9 & 4 & 9 \\ \textcircled{33} & \textcircled{22} & \textcircled{33} \end{matrix}$

$$25) -\sqrt{45} + 2\sqrt{5} - \sqrt{20} - 2\sqrt{6}$$

$$26) 2\sqrt{20} - \sqrt{20} + 3\sqrt{20} - 2\sqrt{45}$$

$$27) -3\sqrt{45} + 2\sqrt{12} + 3\sqrt{6} - 3\sqrt{20}$$

$$28) -3\sqrt{3} - 5\sqrt{5}$$

$\begin{matrix} \uparrow & \uparrow & \uparrow & \uparrow \\ 9 & 9 & 4 & 9 \\ \textcircled{33} & \textcircled{33} & \textcircled{22} & \textcircled{33} \end{matrix}$
 $-3\sqrt{3} - 9\sqrt{5} - 2\sqrt{5} + 6\sqrt{5}$

Section : 6.3 Cont...

Obj: To multiply radical expressions

Multiplying Radicals:

FOIL! FOIL! FOIL!

$$6 \cdot 4\sqrt{2} = 24\sqrt{2}$$

$$6\sqrt{3} \cdot 4\sqrt{2} = 24\sqrt{6}$$

$$6\sqrt{2} \cdot 4\sqrt{2} = 24\sqrt{4}$$

$$24 \cdot 2 = 48$$

$$1.) (-3 + 5\sqrt{2})(4 + 2\sqrt{2})$$

F	O	I	L
$-3 \cdot 4$	$-3 \cdot 2\sqrt{2}$	$5\sqrt{2} \cdot 4$	$5\sqrt{2} \cdot 2\sqrt{2}$
-12	$-6\sqrt{2}$	$+20\sqrt{2}$	$+10\sqrt{4}$
			$+10(2)$
-12	$-6\sqrt{2}$	$+20\sqrt{2}$	$+20$

$$3.) (2 + 3\sqrt{3})^2$$

$$(2 + 3\sqrt{3})(2 + 3\sqrt{3})$$

$$4 + 6\sqrt{3} + 6\sqrt{3} + 9\sqrt{9}$$

$9(3)$

$$4 + 6\sqrt{3} + 6\sqrt{3} + 27$$

$$\boxed{31 + 12\sqrt{3}}$$

$$2.) (4 - \sqrt{3})(2\sqrt{3} + 5)$$

F	O	I	L
$4 \cdot 2\sqrt{3}$	$4 \cdot 5$	$-\sqrt{3} \cdot 2\sqrt{3}$	$-\sqrt{3} \cdot 5$
$8\sqrt{3}$	$+20$	$-2\sqrt{9}$	$-5\sqrt{3}$
		$-2(3)$	
$8\sqrt{3}$	$+20$	-6	$-5\sqrt{3}$

$$4.) (3 - \sqrt{2})(3\sqrt{2} + 1)$$

$$\boxed{14 + 3\sqrt{3}}$$

Try these:

5.) $(4+2\sqrt{3})(1-3\sqrt{2})$

$$4 - 12\sqrt{2} + 2\sqrt{3} - 6\sqrt{6}$$

7) $(3+2\sqrt{2})(3-2\sqrt{2})$

$$9 - \cancel{6\sqrt{2}} + \cancel{6\sqrt{2}} - 4\sqrt{4} \\ - 4(2)$$

$$9 - 8$$

$$\boxed{1}$$

6. $(2-3\sqrt{7})^2$

$$(2-3\sqrt{7})(2-3\sqrt{7})$$

$$4 - 6\sqrt{7} - 6\sqrt{7} + 9\sqrt{49}$$

$$9(7)$$

$$4 + -12\sqrt{7} + 63$$

$$\boxed{67 - 12\sqrt{7}}$$

Homework:

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